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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,406

07/18/2003

HanCheng Hsiung

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12/12/2006

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
700 LAVACA, SUITE 800
AUSTIN, TX 78701

EXAMINER

LU, CHARLES EDWARD

ART UNIT

PAPER NUMBER

2163

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,406

Applicant(s)

HSIUNG ET AL.

Examiner

Charles E. Lu

Art Unit

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Response to Arguments

1. This Action is in response to the request for continued examination dated 9/14/2006. Claims 1-20 are pending. Claims 1-20 are rejected.
2. The 35 U.S.C. 101 rejection for claim 8 is maintained. See below discussion.
3. Arguments regarding the prior art rejection have been fully considered but are not persuasive. It is noted that Applicants argue the claims as amended.

Applicant argues that Moore and Lomet do not teach or suggest, "generating a storage checkpoint of file system data of the production database." The examiner respectfully disagrees. Moore suggests file system data at least because Moore can be used with "any computer system" (para. 0013). Furthermore, Lomet must have a file system to operate. The production database is discussed in a previous Action. Also see rejection below.

Applicant argues that Moore and Lomet do not teach or suggest, "generating a database clone, wherein the data of the clone comprises data from the storage checkpoint." The examiner respectfully disagrees. As to the interpretation of "clone" (Amendment, p. 9, fourth line from bottom), the broadest reasonable interpretation is used. For example, a database backup or copy is considered a "clone" because the backup/copy contains the same data as the original. Therefore, both Moore and Lomet teach database "clones." Also see the below rejection for a complete analysis.

Applicant argues that Moore and Lomet do not teach or suggest, "loading new data to the database clone...during said load." The examiner respectfully disagrees. See below rejection.

As to p. 10 of the amendment, line 5, the examiner recognizes that it would have been obvious to modify Moore. The word "not" appears to have been accidentally inserted in Applicant's remarks and will be interpreted as being unintentional.

Applicant states on p. 10, second paragraph of the Amendment that stabilization of wireless communications in Moore does not relate towards Lomet's system of availability of on-line back-ups, and therefore, there is no motivation to combine. To address the arguments (Amendment, p. 10, second paragraph, line 8), the examiner recognizes that Moore can be used in any computer system besides a wireless cellular system (Emphasis added, Moore, para. 0013, last sentence). Furthermore, even if Moore relates to a stabilization of wireless communications, both Moore and Lomet are generally drawn to data backup systems, which is reasonably pertinent to the particular problem with which the inventor was concerned. See MPEP 2141.01. Also see rejection below for a complete analysis of the combination.

Applicant argues that Moore and Lomet do not teach or suggest, "switching the storage checkpoint...for the production database." The examiner respectfully disagrees. As to the interpretation of "refresh mechanism" for switching, (p. 10 of Amendment, second to last line), the examiner interprets this as software that facilitates the switching of the primary and secondary database (thus a mechanism "refreshing" the control of the database). Thus, the acts of Moore in response to a fault or failure

clearly provides a refresh mechanism. See below rejection for a more detailed analysis.

Also, see the below 35 U.S.C. 112 rejection.

Applicant's arguments concerning independent claims 8, 9, and 15, which contain similar limitations, are addressed above.

Therefore, the prior art rejection is maintained.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 8 is rejected under 35 U.S.C. 101.

As to claim 8, all of the "means for" is interpreted to be software per se.

Applicants state that the means may correspond to computer hardware (see Amendment, p. 7, last line), but the Examiner recognizes that the means may be interpreted in light of the specification as the software itself. For example, in para. 0034, the claimed "means for generating a storage checkpoint" is interpreted to be the refresh mechanism. The refresh mechanism is interpreted to be a software module (e.g., fig. 1, #200). In another example, the claimed "means for loading" is performed on a host machine (para. 0034). A means performed on a host machine is interpreted to mean that the "means" is software, and the software is used for instructing the host machine to perform its task. Therefore, contrary to Applicant's position, the "means for" in this does not require any hardware (e.g., a host machine), but rather only the software used for controlling the hardware. As such, the claimed system is taken to be a system of

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software, which is non-statutory. It is suggested that the claim include at least one hardware component, such as a server or a host machine.

The examiner recognizes that Applicants have used a "means plus function" claim which invokes 112, 6th paragraph. However, the claim embodies non-statutory subject matter because the specification shows a software embodiment (e.g., fig. 1).

Art rejection is applied in anticipation of Applicant amending the claims to overcome the 35 U.S.C. 101 rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5a. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

As to claim 1, the claim recites, "wherein data of the database clone comprises data from the storage checkpoint." However, the specification merely discloses, "generating a database clone from the storage checkpoint" (emphasis added, para. 0034-0035, fig. 1-2). This does not appear to require that the clone comprises data

from the checkpoint (i.e., the clone possesses data from the checkpoint). For example, the checkpoint is shown between the refresh mechanism and the production database (see #200, #202) and do not appear to be stored within the database clone. Therefore, the claimed subject matter does not appear to be described in the specification.

Furthermore, as to claim 1, the claim recites, “wherein said load updates the storage checkpoint.” However, the specification merely discloses loading new data to the database clone (para. 0034-0035, fig. 1-2). The specification does not appear to mention any updates of the storage checkpoint.

The other independent claims are rejected for similar reasons as claim 1, and all of the dependent claims inherit the deficiencies of the independent claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5b. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, it is unclear what is meant by “switching the storage checkpoint to be the file system for the production database” at least because the storage checkpoint is not claimed with more than one state (so that it can accomplish any switching), and because the storage checkpoint is already of the file system data of the production database (line 6) and therefore does not need to be “switched” in order to “be” the file system data of the production database (last limitation).

The other independent claims are rejected for similar reasons as claim 1, and all of the dependent claims inherit the deficiencies of the independent claims.

The broadest reasonable interpretation is given to the claims. Art rejection is applied as best understood in light of the 35 U.S.C. 112 rejection above.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-11, 13-17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (Pub. No. 2003/0092438) in view of Lomet (U.S. Patent 6,578,041).

As to claim 1, Moore teaches the following claimed subject matter:

One or more hosts (see fig. 2);

A production database (primary database, fig. 2, #52);

A refresh mechanism (software) including generating a checkpoint of the production database (fig. 2, #82, para. 0019, using "checkpointing service");

Generating a database clone (see "replica", "same version", para. 0019), wherein data of the database clone comprises data from the storage checkpoint (replicating the state data, para. 0019, note that the checkpointed data is sent to and stored within the "clone" #54);

Switching the storage checkpoint to the production database (secondary assuming control of the database therefore being the new production database, para. 0020); Note that since the secondary now assumes control as a primary (production) database, the storage checkpoint has been switched;

Loading new data to the database clone (upgrading the application, para. 0022 on the new primary system) wherein the load updates the storage checkpoint (loading new data updates the storage checkpoint so that another checkpoint (#82) can be made later, e.g., fig. 4, #122);

Moore does not expressly teach wherein the production database is available for access by users during the loading.

However, Lomet teaches wherein a database is available for access during loading to a clone. Lomet sets up the databases as a production (primary) database and a cloned database (fig. 2). Lomet states that a database available for access

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during backup is conventional (on-line backup, col. 3, ll. 25-30) and provides an improved method for coping data from an active, stable database to a backup database while update activity continues (col. 6, ll. 32-42, 45-55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moore with the above, such that the production database is available for access during the loading. The motivation would have been to achieve high availability, as taught by Lomet (col. 3, ll. 35-40).

Moore does not expressly teach, "file system data."

However, Moore suggests file system data because of the use of databases (fig. 2) and because the system can be implemented on any computer system (para. 0013). Furthermore, Lomet teaches a computer system which works on file system data (see fig. 2 and text starting from col. 8, l. 15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Moore and Lomet with the above, such that the system operates on file system data, generating the storage checkpoint is "of file system data," and, finally, switching the storage checkpoint switches to be "the file system data" as claimed. The motivation would have been to operate on a computer (Moore, para. 0013) with a file system (Lomet, col. 9, ll. 4-24), and to apply Moore to a computer system other than a wireless cellular system.

As to claim 2, Moore, as modified by Lomet, teaches performing post-processing on the clone prior to the switching (e.g., copying the data to the clone after a stable state is known, para. 0019).

As to claim 3, Moore, as modified by Lomet, teaches stopping the production database prior to the switch (fig. 3, #107) and starting the production database after the switch (para. 0020, fig. 4, #124). Note that the production database after the switch is taken to be the cloned database that now operates as a primary database.

As to claim 5, Moore, as modified by Lomet, teaches wherein the generated database clone includes references to data (e.g., the replica state databases are logical pointers to a single physical database, para. 0019).

Moore and Lomet do not expressly teach references to data in the production database.

However, Moore suggests that the references could be used for data in the production database (fig. 2, #52, para. 0018-0020).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moore and Lomet with the above, such that the clone includes references (pointers) to data in the production database. The motivation would have been to adapt to the particular requirements of the database system, as taught by Moore (para. 0019).

As to claim 6, Moore, as modified by Lomet, teaches wherein the refresh mechanism is configured to perform the loading of new data to the clone on a different host machine than the host machine hosting the production database (para. 0018-0020, fig. 2).

As to claim 7, Moore, as modified by Lomet, teaches performing the loading of new data to the database clone on a host machine hosting the production database (fig. 2, para. 0018-0020).

Claims 8-11, 13-17, 19 and 20 are directed to a system, method, or computer readable medium claiming substantially the same invention as system claims 1, 2, 3, 5, and 6. Therefore, claims 8-11, 13-17, 19 and 20 are rejected based upon the same reasoning as stated above in the rejection of claims 1, 2, 3, 5, and 6.

7. Claims 4, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (Pub. No. 2003/0092438) in view of Lomet (U.S. Patent 6,578,041) further in view of Applicant Admitted Prior Art (AAPA).

As to claim 4, Moore and Lomet do not expressly teach wherein the production database is a data warehouse.

However, AAPA teaches that a data warehouse is a database and may be a consolidation of other databases (p. 1, ll. 13-15). Moore and Lomet both teach production databases, as discussed above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moore and Lomet with the above teachings, such that the production database is a data warehouse. The motivation would have been to facilitate business decisions, as taught by AAPA (p. 1, ll. 14-19).

Claims 12 and 18 are directed to a method, or computer readable medium claiming substantially the same invention as system claim 4. Therefore, claims 12 and

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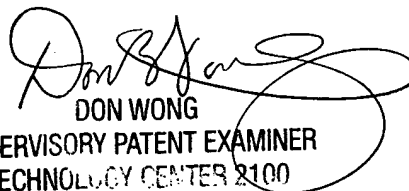
18 are rejected based upon the same reasoning as stated above in the rejection of claim 4.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

CL
Assistant Examiner
AU 2163
12/5/2006

CDL
C. Dune Ly